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## Peregrinations | February 2007 The Entrepreneurs' New Cloth

by Sally B. Patterson

Unlike the emperor's new duds that were a clever hoax, entrepreneurs are coming up with seemingly miraculous innovations in cloth and clothing manufacture that are quite real.

Textile-related innovations for 2007, profiled in Future Materials magazine, range from practical products such as biotech fabrics that kill bacteria or promote healing to whimsical ones such as a shirt that can deliver a simulated hug. There are pasteless wallpapers, sound barriers and temperature controllers, and materials made from or incorporating corn, bamboo and shark livers.

 Energlo glow-in-the-dark fabric is used in safety garments such as this poncho. Courtesy of Specialty Group.

Materials involving photonic techniques or with related applications also are well-represented. Photonic textiles from Philips incorporate LED arrays to display graphics, text and even animations; Konarka employs a photovoltaic material to convert visible and invisible light into electricity; Lyttron (Bayer) makes electroluminescent films that do not produce heat and that can be molded into almost any shape; and Specialty Group has created Energlo, a fabric that glows in the dark for more than three hours after only 12 minutes' exposure to sunlight.

A nanolayered filament fiber created by Teijin mimics the way that butterfly wings change color at different viewing angles; 3M/Bayer uses a transparent film for a license plate that is uniformly lighted from within; and the University of Manchester creates compression stockings using a scanner to take precise limb measurements. Interactive Wear AG makes a jacket that uses a global positioning system to track the wearer; 3M has developed labels that include an optically variable device that can be visualized or mechanically detected to ensure product authenticity; and lens users should welcome Nanofilm's cloth-applied coating that prevents the formation of fog for hours at a time in cold or moist environments.

Last, but not least, MIT scientists have created meshlike webs of light-detecting fiber enabling measurements of the direction, intensity and phase of light without the use of lenses, filters or detector arrays.

These fabrics of vision are, indeed, such stuff as dreams are made on.